Last Updated: April 2004

PPG Discontinued Operations Site

EPA ID Number: PRD000692715

Other (Former) Names of Site

While the facility was in operation from 1971 to 1978, the facility was called the PPG Industries Caribe. Since the facility closed operations the name of the facility is PPG Discontinued Operations Site.

Site Description

The PPG Discontinued Operations Site is located on the south coast of Puerto Rico at the mouth of the Macaná River at the northeast coast of Guayanilla Bay. The village of La Playa de Guanilla lies about o.5 mile south and southwest of the Site. The Site occupies approximately 265 acres and is bordered by Route 2 (PR 2) on the northern edge and Route 127 on most of the western and southern edges.

The facility began operations as a chemical manufacturing complex that produced chlorine, caustic soda, ethylene glycol, and vinyl chloride monomer (VCM). The raw materials used to manufacture these products were primarily water, ethylene, salt and oxygen. PPG shut down plant operations in November 1978.

Site Responsibility

Cleanup at this site is being addressed by the U.S. Environmental Protection Agency (EPA), under authority of the of the Resource Conservation and Recovery Act (RCRA). The Puerto Rico Environmental Quality Board (EQB) participates with EPA in cleanup decision-making and oversight.

Threats and Contaminants

As a result of past leaks from process and storage areas, there are two plumes of contaminated groundwater at the site, the Southeastern and the Western plumes. The Southeastern plume emanates from a chemical storage tank, now removed, at the Betteroads area and the Western plume emanates from the former vinyl chloride monomer (VCM) Utility plant area. Both plumes pose a potential ecological threat to the surface waters of the Caribbean Sea, because of the natural groundwater flow towards Guayanilla Bay. The main contaminants of concern in these plumes are: vinyl chloride,

1,2-Dichloroethane and other volatile organic compounds (VOCs). The highest concentrations measured for these VOCs, in parts per billion (ppb) were:

Volatile Organic Concentration	Compound
Acetone	6,300 ppb
Chloroform	17,000 ppb
1,2-Dichloroethane	33,000 ppb
1,1-Dichloroethene	1,200 ppb
Trichloroethane	4,200 ppb
Vinyl chloride	22,000 ppb

The groundwater is not authorized to be used for drinking and the area is supplied with drinking water by the Puerto Rico Aqueduct and Sewer Authority (PRASA), but some groundwater is reportedly used for agriculture and other purposes from unregistered private wells.

CLEANUP APPROACH

Cleanup Status/Corrective Action

The site has been addressed by PPG Industries, Inc., under EPA oversight, in two measures directed at cleanup of the site: Interim Measures and a Supplemental Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI).

Response Action Status

Interim Measures
These measures have delineated the vertical and horizontal extent of volatile organic contaminants (VOCs) in groundwater of the southeastern (Betteroads) plume and has provided an interpretation of the horizontal and vertical extent of the source area. PPG has proposed that Monitored Natural Attenuation be selected as the remedial strategy for source control and long term management of the Southeastern area plume. Natural Attenuation is the breakdown of the VOCs into harmless by-products through the action of naturally occurring microorganisms below the surface of the ground.

Supplemental RCRA Facility Investigation (RFI)
This RFI has produced conclusions similar to that of the Interim Measures, but focuses on the area of the Western (VCM) plume.

Cleanup Progress

After cessation of operation, PPG embarked on an extensive cleanup of the facility and former waste disposal areas. From 1978 to 1984, PPG decommissioned the facility and cleaned up 16 distinct areas/units at the site, at a cost of more than $16 million. Cement impoundments, hazardous wastes and contaminated soil were removed. These wastes were shipped to the Chemical Waste Management facility, an authorized hazardous waste disposal facility in Emelle, Alabama. Plant buildings were decommissioned and disassembled; components of the plants were cleaned, waste storage tanks were cleaned of all their wastes and closed and impoundments that stored hazardous wastes were removed.

In 1979, PPG implemented an extensive soil and groundwater sampling program to evaluate environmental conditions at the site. The investigation focused on the extent of mercury contamination, but also addressed volatile organic contaminants (VOCs), specifically chlorinated organic compounds. At all areas/units, PPG took soil samples, implemented remedial activities, and conducted post-excavation sampling to document that soil cleanup goals had been achieved for these areas. The excavated concrete, sludge, wastes and soil that were deemed hazardous were transported to the hazardous waste disposal facility in Emelle, Alabama.

Checking mercury air

concentration.

PPG received approval of their closure plans frm EPA in September 1984, at which time the company agreed to perform one year of quarterly groundwater monitoring. The results of the groundwater monitoring indicated residual groundwater contaminated with chlorinated volatile organic contaminants (VOCs). In September 1990, PPG entered into an agreement with the U.S. EPA in which PPG was to conduct a RCRA Facility Investigation (RFI) in accordance with the requirement of the RCRA program. This order did not require corrective action studies or corrective measures at that time. The purpose of the RFI was to investigate the nature and extent of the chlorinated VOCs in the soils and groundwater at the site. The order also called for PPG to conduct a risk assessment to address residential mercury contamination within the soils of the facility.

Collecting sample.

In August 1995, PPG submitted the RCRA Facility Investigation (RFI) report to EPA for review. As a result of the RFI findings, EPA required that PPG submit two work plans for the Southeastern (Betteroads) plume and Western plume. Both plumes partially discharge to Guayanilla Bay. The delineation report for the two plumes was submitted to EPA in April 2000. EPA has reviewed these data and their

interpretation, in terms of whether Monitored Natural Attenuation is an appropriate cleanup strategy. PPG is currently installing new groundwater monitoring wells. They will sample these wells in addition to the existing wells in order to collect groundwater contamination data that would serve to clarify whether natural attenuation is effective in cleaning up the site's groundwater.

Based on EPA criteria, and the most recent past sampling data, the concentration of the chlorinated volatile organic contaminants (VOCs) being transferred from groundwater to these surface waters of Guayanilla Bay is not significant and does not exceed surface water standards.

The impact of contaminants within the shallow groundwater potentially being transferred to the indoor air of local residences in the community of Playa de Guayanilla is still being assessed. The initial results are that indoor air quality has not been significantly affected.

No active cleanup of the contaminated groundwater is currently being performed.

Purging well with bailer.

First attempt with power auger at collecting sample.

Permit Status

The facility closed before a Resource Conservation and Recovery Act (RCRA) permit was required.

Site Repository

Copies of supporting technical documents and correspondence cited in the fact sheet are available for public review at the following location:

U.S. Environmental Protection Agency, Region 2
RCRA Records Center

290 Broadway, 15th Floor, Room 1538
New York, New York 10007-1866
Telephone: (212) 637-3043